

HJD Earns Magnet Recognition for Nursing Excellence

Francesca Tedesco, RN, shelved a degree in business because she wanted something “more fulfilling.” One year after graduating from NYU College of Nursing in 2007, she joined HJD, where she is one of 280 staff nurses and is certified in orthopaedic nursing.

Karsten Moran

All Three of NYU Langone’s Hospitals Now Boast a Coveted Status

Despite the pain and discomfort of having had knee replacement surgery, the 65-year-old patient flashes a smile when the nurse enters her room at NYU Langone Medical Center’s Hospital for Joint Diseases (HJD). In the banter that follows, the reason becomes clear. The nurse, Francesca Tedesco, RN, was the woman’s caregiver one year earlier, when she had the same procedure performed on her other knee, and for her return visit, she insisted on the same proven performer.

“Working at a smaller hospital gives me more time to be with my patients and get to know

them,” says Tedesco, who shelved a college degree in business to become a registered nurse. “I love this work. I can’t imagine doing anything else.”

Tedesco is one of some 280 staff nurses at HJD, all of whom, says Ann Vanderberg, RN, vice president for nursing and patient services at HJD, are prized by physicians and patients alike for their skill, dedication, and compassion. Now, that admiration is official. In August, HJD received Magnet® recognition for its nursing excellence and quality patient care. The new status, conferred by the American Nurses Credentialing Center (a

subsidiary of the American Nurses Association), puts HJD in the select company of only 6% of hospitals and medical centers nationwide, including NYU Langone’s Tisch Hospital and Rusk Institute of Rehabilitation Medicine, which earned Magnet recognition in 2005 and were redesignated in 2009. “We began applying for Magnet 10 years ago as part of our plan to become a world-class institution,” notes Vanderberg. “The designation is recognition by our peers of the culture of excellence we’ve built here, and which we now have to work harder than ever to maintain.”

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Stephanie Quito puts the finishing touches on her self-portrait, which she started working on after her traumatic brain injury to enhance her various forms of therapy.

Believing in Your Own Brain

One Small Triumph at a Time, Survivors of Traumatic Brain Injuries Rebuild Their Lives

Of the event that changed her life, Stephanie Quito remembers nothing. In March 2010, she was on spring break in the Dominican Republic. With Quito in the passenger seat of an all-terrain vehicle, the driver—one of her friends—swerved to avoid a bump in the road. As the vehicle started to tip over, her friend hit the brakes, throwing both of them onto the ground. Quito was knocked unconscious, her head badly injured and bleeding profusely.

At a local hospital, she underwent surgery to remove a blood clot pressing against her brain. Once back home with her parents in Ozone Park, New York, Quito was admitted to NYU Langone Medical Center, where her mother, Zoila, is a patient care technician. She became an inpatient in the brain injury unit of the Rusk Institute of Rehabilitation Medicine, located at the Hospital for Joint Diseases. “My memories start with my last week at Rusk,” Quito recalls. “One of my assignments was to make cupcakes. I went to the grocery store with my therapist, bought the ingredients, and baked

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From the Dean & CEO

Medicine is one of the few professions Benjamin Franklin did not choose to enter and excel at, but when he noted that “an ounce of prevention is worth a pound of cure,” he encapsulated in one of the wisest of proverbs what all physicians know to be true. As bedside caregivers who are ever vigilant, nurses know it, too. So we can be especially proud of the nursing staff at our Hospital for Joint Diseases, which in August, based on its nursing professionalism, teamwork, and superiority in patient care, joined Tisch Hospital and the Rusk Institute of Rehabilitation Medicine in having earned Magnet recognition by the American Nurses Credentialing Center. The power of prevention is a theme that runs throughout this issue, in fact. At our new Center for Women’s Imaging, it’s never been easier for a woman to get a mammogram that can save her life. On several units of Tisch Hospital, pharmacotherapists now

round with physicians to help ensure that drug selection, dosage, and titration are all on target. In Tisch’s outpatient pharmacy, a vaccine for shingles, a potentially devastating disease, is now available by prescription, thanks—I’m proud to say—to the crusading efforts of my wife, Dr. Elisabeth Cohen, professor of ophthalmology.

Robert I. Grossman, MD



Beatrice de Gía

On Tisch Hospital’s mother-baby unit, Maria Rivera delivers a gourmet lunch to Marne Friedman, a new mom.

A Meal Fit for a Mom

Less than 24 hours ago, the young woman had given birth to a beautiful, healthy baby boy. As she held him in her arms, sitting up in bed in the mother-baby unit on the 13th floor of NYU Langone Medical Center’s Tisch Hospital, it was time to celebrate in style. Calling room service, she ordered spinach salad mimosa, red wine-braised beef short ribs on a bed of smoked gouda polenta, sautéed asparagus spears, and Tahitian vanilla crème brûlée. The restaurant-style menu was developed by Ronald Brandl, director of culinary operations, who is a talented, internationally trained chef with years of experience in the resort business. Dinner, delivered by a cheerful, vested concierge, was served with a linen napkin, elegant flatware, fine china, and a fresh flower in a tapered vase.

The gourmet-style meal program for obstetrics patients was introduced in January 2012 to “acknowledge the specialness of having a baby,” explains Karen Goodman, RN, nurse manager of the unit. Because babies arrive on their own schedule, it makes sense to give new moms the opportunity to order at a time that’s convenient for them, rather than make them adhere to the hospital’s meal-time schedule. While patients in other parts of the hospital often have dietary restrictions, new mothers are typically healthy and able to eat whatever they want.

Betty Perez, senior director of Food and Nutrition Services, says that many patients are “amazed” when they see the top-notch selections. Mothers who have sampled the breakfasts, lunches, and dinners from the room service menu offer high praise: “Fantastic to be able to order at a time that suited me.” “I felt like I was ordering from a five-star restaurant.” “Excellent menu, presentation, quality, and service.”

The room service staff includes chefs, concierges, and dining associates with degrees in nutrition. When mothers phone in their orders, the meals are prepared individually and delivered to their rooms within 45 minutes. Special diets are no problem, and the kitchen caters to any palate. “Our goal was to create a world-class dining experience,” says Perez. “The fact that our OB patients actually look forward to a hospital meal testifies to the success we’ve achieved.”

Run to Your Heart’s Content

It’s a marathon runner’s worst fear: after months of training, hopes are dashed in the instant it takes to pull a muscle or twist an ankle during a rigorous workout. That’s why “Marathon Training: Your Guide to a Smart Start and Safe Finish”—the first wellness seminar from NYU Langone Medical Center’s new Center for Musculoskeletal Care (CMC) on East 38th Street—was something of a runner’s high for many of those 40 or so people who attended the August event, some of them in training for the upcoming New York City Marathon.

Physical therapist Colleen Brough, PT, offered valuable advice on how to avoid the seven most common running injuries, including pulled hamstring, Achilles tendinitis, plantar fasciitis, and stress fracture. “There’s a consistency between weakness and imbalance in the glutes, back, and core muscles and runners who are injured,” Brough told the audience, which ranged from novice to seasoned marathoners. “If you can predict it, you can prevent it.” Her prescription was a three-phase corrective exercise program, demonstrated with the help of volunteers, for strengthening those muscles.

Alison Peters, an exercise physiologist with CMC’s Sports Performance Center, explored the mechanics of running, including the proper foot strike. Hitting the pavement with your heel slows you down and leads to injuries, she cautioned, whereas striking with the mid to forefoot provides the ideal weight distribution and minimizes the injury risk. The proper running shoe, she pointed out, is critical.

An admitted “heel-striker,” four-time marathoner Jennifer Ishii (shown below) found the seminar “extremely helpful” and vowed to retool her workouts around the training tips. She had the opportunity to put the new mechanics to work as she helped demonstrate the Sports Performance Center’s Alter-G™ antigravity treadmill, used for both athlete training and injury recovery. Air rushing into a pressure-controlled chamber from the waist down gently lifted Ishii up so that she hit the treadmill with only a fraction of her body weight. “It was an effortless run,” she said afterward, “and for the first time, I didn’t strike with my heels.”



Karsten Moran

NYU Langone Is First in the US to Offer New Ultralow-Dose CT Scans

NYU Langone Medical Center is the first medical center in the US to offer patients an ultralow-dose CT scanner. The Siemens Edge CT, a single-source, 128-slice-per-second scanner, combines rapid scanning speeds with even less radiation than our current low-dose scanners to provide the highest-quality 3-D images. Advanced electronics in its detector system allow radiologists to capture images of structures as small as 0.3 mm.

Without sacrificing image quality, the Edge CT makes possible precise diagnoses using doses that are 70 to 80% lower than levels already considered safe by accrediting organizations, explains Alec Megibow, MD, professor of radiology and director of outpatient imaging services. Some patients may need only a dose comparable to natural background radiation in the outdoors. This is a significant improvement over the current scanning doses of NYU Langone’s other CTs, which are 50 to 60% lower than national standards.

Decreasing the amount of radiation normally results in images that are less clear because there is insufficient X-ray to create the image. But the Edge CT decreases the force of the X-rays and uses a more sensitive and efficient detector and advanced image-processing techniques, yielding images that are indistinguishable from those obtained at higher dose levels. While the patient is scanned with a lower dose, the technology provides 3-D capabilities that contribute to a proper diagnosis. The first Edge CT system is now available at NYU Langone’s Faculty Practice Radiology. A second is planned for Tisch Hospital.

A Prescription for Enhancing Patient Care

As Hospital Pharmacists Join Physicians at the Bedside, the Result Is Better-Informed Clinical Decisions

In the Critical Care Center of NYU Langone Medical Center, on the 15th floor of Tisch Hospital, John Papadopoulos is a familiar and reassuring presence. As a 12-member medical team rounds among patients, they listen to him intently. On this particular morning, he's explaining how to break the seizure of a patient with epilepsy by using propofol, and then how to wean him safely to a longer-acting drug. Shortly afterward, the attending physician, fellows, residents, and nurse practitioners are, once again, all ears as he warns of the potential renal damage from a long-term course of aminoglycosides (a group of antibiotics). That Papadopoulos is a trusted and valued member of the clinical team that reviews each case daily is quite clear. Less obvious, though, is the fact that he's not a physician.

Papadopoulos, clinical assistant professor of medicine, is a board-certified pharmacotherapist. As director of the Division of Pharmacotherapy, he heads up a 15-member team of clinical pharmacists that's changing the notion—and expanding the role—of the pharmacist beyond that of the behind-the-counter dispenser of drugs. “We round with the medical teams, see patients at bedside, and are proactively involved in their ongoing care,” says Papadopoulos. Indeed, pharmacotherapists are experts in the therapeutic use of medicines, particularly antibiotics used to battle infectious diseases. Thanks to years of education and postgraduate training, they can provide evidence-based information and reliable advice to physicians, as well as patients, about safe, appropriate, and cost-effective drug management.

With outcomes gaining ever more currency in healthcare, pharmacotherapists have proven their ability to significantly reduce adverse drug events, medical errors, and the length of patient stays, according to a number of national studies. “They give us good advice about medication dosing and help us to identify drug-drug interactions,” notes Eduardo Iturrate, MD, instructor in medicine and co-director of the hospitalist program at NYU Langone's Hospital for Joint Diseases. “They're an extra set of eyes and ears that allows us to manage a very busy medical service.”

One of the pharmacotherapy team's greatest assets is its laserlike focus on potential complications and side effects. “By rounding with the medical team



Pharmacotherapists like Cindy Chen (center) are particularly valuable—and welcome—in the medical and surgical intensive care units, where it's not unusual for a critically ill patient to be on more than a dozen drugs at the same time.

on a daily basis, we help determine whether a problem could be medication induced or a consequence of medication interactions,” explains Xian Jie (Cindy) Chen, a pharmacotherapist specializing in internal medicine. “For those rare side effects, I often do a literature search to confirm whether the same reaction has been reported in other patients on the same drug.”

The probing minds of pharmacotherapists are particularly valuable—and welcome—in the medical and surgical intensive care units, as well as the Emergency Department (ED). It's not unusual for a critically ill patient to be on more than a dozen drugs at the same time, some of them potent antibiotics, creating a flashpoint for possible adverse events. “It gets complicated,” notes Papadopoulos, “so it makes sense to have a pharmacotherapist at the bedside to help with drug selection, dosing, and titration.”

For different reasons, a pharmacotherapist is stationed in the ED. Studies have shown that EDs have the highest rate of preventable adverse events of any clinical environment, yet Tisch Hospital is

among the less than 5% of hospitals in the country that assign a clinical pharmacist to their ED.

The Division of Pharmacotherapy was created in 2008 under the stewardship of Papadopoulos to, as he puts it, “give us a clinical pharmacy capability as strong as our medical and nursing services.” The program has grown modestly in size every year since and now includes specialists in the fields of critical care, internal medicine, infectious disease, pediatrics, hematology/oncology, and emergency medicine. At the same time, it has broadened its clinical reach, developing protocols and guidelines to optimize the use of medications across the hospital, as well as a medication counseling service that works directly with patients.

“Medicines have become so incredibly numerous and complex that it's a challenge even for pharmacists to stay current,” acknowledges Papadopoulos. “That's why it's so important for us to be at the bedside, where key decisions about patient care are made.”

Believing in Your Own Brain *(continued from page 1)*

them. But when she asked me the names for ‘knife’ and ‘fork,’ I couldn't answer.”

More than 1.7 million Americans suffer traumatic brain injuries (TBIs) each year from causes that include motor vehicle accidents, sports injuries, and assaults. But that number is rising because our aging population is more prone to falls—the leading cause of TBI.

Serious brain injuries like Quito's affect virtually every aspect of life, from attention and mood to reasoning and communication. As one of the country's leading brain injury treatment centers, Rusk marshals an array of specialists to address each patient's various deficits, based on comprehensive evaluation of brain function.

“We treat all the problems associated with brain injury,” explains Steven Flanagan, MD, the Howard A. Rusk Professor of Rehabilitation Medicine and chair of the Department of Rehabilitation Medicine, “including difficulty walking and performing daily activities, depression, irritability and sleep disorders, and problems with memory and concentration.” Dr. Flanagan, a leading expert in the field, plans to expand Rusk's rehabilitation services for TBI patients in the years to come.

Like the stark realities that become apparent only after the fog of war has lifted, the true damage from any brain injury becomes discernible during the early stages of treatment. In the weeks following the initial trauma, as bruising and swelling subside, some damaged brain cells heal, while other damage may require months of therapy. Deficits that don't respond to treatment may be permanent. Rehabilitation aims to maximize healing, helping patients to retrain their brains and develop coping and compensatory strategies.

When Stephanie Quito entered Rusk, her gait and balance were impaired, and she was having difficulty using and processing words, a condition known as aphasia. Stephanie was prescribed a regimen of physical, speech-language, cognitive, and occupational therapy, plus psychological counseling. Drills included tracing letters with her hand, conjuring words for different categories, and relearning how to follow instructions.

By the end of her three-week stay, Quito's physical and behavioral issues were resolving themselves, and her vocabulary had improved markedly—progress that boded well for her ultimate recovery and also reflected her will to succeed.

“We talk about the science of recovery,” says Karen Gendal, Quito's speech-language therapist, “but there's a lot to be said about people's own belief that they'll get better. Stephanie really believes in herself.”

In May, Quito graduated from the State University of New York at Stony Brook with a dual degree in healthcare management and art. Her outpatient therapy with Gendal focuses on spelling, word finding, reading comprehension, and note taking. Meanwhile, she is sharpening her cognitive skills, such as attention, organization, and planning, with the help of neuropsychologist Donna Langenbahn, PhD, clinical associate professor of rehabilitation medicine. “She has to work harder than before to accomplish similar tasks,” says Dr. Langenbahn, “but she's willing to put in that effort.”

Although her cognitive abilities still aren't what they used to be, Quito, now 24, has seen steady improvement. “My memory and concentration get better all the time,” she says. “It's incredible to me how far I've come. I want to inspire people who've had accidents like mine. I want them to understand that if you're motivated and involved in your recovery, it will happen.”

A Sleeping Tiger

Her Life Forever Changed by Shingles, Dr. Elisabeth Cohen Has Turned from Patient to Advocate

Noticing a small bump near her hairline, Elisabeth Cohen, MD, professor of ophthalmology, figured it was a mosquito bite. But a few hours later, a cluster of blisters had arisen. It was then that she knew the diagnosis: herpes zoster, or shingles. Dr. Cohen began taking Valtrex, an antiviral medication, hoping that it would ward off the worst ravages of the disease. Still, she knew that shingles is wildly unpredictable—and potentially devastating.

Although more common with increasing age, shingles can strike anyone who's had chicken pox. Like a sleeping tiger, the varicella zoster virus lies dormant until roused by a lapse in the immune system. It travels down nerve fibers to the skin, erupting in a rash of liquid-filled vesicles, typically on one side of the body or face, along with severe neuralgia and itchiness. The agony usually lasts about a month, but it can persist for far longer, even years. If the infection strikes the trigeminal nerve, it can spread to cranial arteries, triggering a stroke. It can also invade the eye, causing severe damage. Antivirals may shorten the duration of the rash, but they reduce the incidence of eye complications by only 50%.

Dr. Cohen had treated ocular zoster patients with pain so unbearable that they begged her to remove the affected eye (not an option with this disease). Yet she felt confident when her own battle with shingles began in 2008. At the time, she was 58 years old, healthy, and fit—and director of the corneal department of the renowned Wills Eye Institute in Philadelphia, the nation's first eye hospital. "My reaction was, 'I've got the very best care. I'm going to be fine,'" says Dr. Cohen.

Her optimism, unfortunately, didn't alter the course of the disease. For six weeks, she recalls, her forehead felt as if it were being zapped by lightning. Anticonvulsant drugs dulled the neuralgia but made her so groggy that she tried to avoid them. Dr. Cohen's husband, Robert I. Grossman, MD, dean and CEO of NYU Langone Medical Center, told her one night, "I can't stand to see you this way. Take whatever you need to stop the suffering." Meanwhile, the infection attacked her right eye, scarring the cornea and threatening her with glaucoma. Steroid eyedrops tamped down the inflammation, but the medication caused cataracts. One year later, her career as a corneal surgeon came to an end. Though she continued to teach, eventually she had to give up her medical practice, a wrenching blow. Dr. Cohen's eye remains badly impaired; its visual acuity is 20/100, and she still uses drops to keep it from deteriorating further.

The experience has turned her into an advocate. "My goal," she says, "is to help protect people from this disease." That means prevention. According to the Centers for Disease Control and Prevention (CDC), one in three Americans will develop herpes zoster at some point—a number that could be greatly reduced if more people were vaccinated. Since 2006,

One in three Americans will develop herpes zoster at some point, but that number could be greatly reduced if more people were vaccinated.

the CDC and the Food and Drug Administration (FDA) have recommended the vaccine for everyone age 60 and over with a healthy immune system, yet only 14% of those eligible receive it. (Last November, the FDA extended its endorsement to those 50 and over, but the CDC has not yet followed suit.) "We need doctors to recommend the vaccine to their 60-plus patients the way they do the flu vaccine," says Dr. Cohen. "I'd be happy if they'd encourage people in their 50s to get it, too."

The shot doesn't guarantee immunity, but it reduces the incidence of shingles by 55%. For patients under 60, whose insurance won't cover the vaccine, the cost (up to \$250) can be prohibitive. But in vaccinated patients who still contract the disease, symptoms are greatly lessened. For Dr. Cohen, that's reason enough to roll up your sleeve.

At NYU Langone, she's striving to increase both availability and awareness of the vaccine. The logistics, however, are complex and challenging. Because the vaccine is made with a live virus, it must be stored in a special freezer and administered within 30 minutes of removal. Most doctors don't have those freezers, and though pharmacies do, New York State pharmacists won't be authorized to administer the shingles vaccine until October 2012.

Last year, Dr. Cohen began working with Tisch Hospital's outpatient pharmacy to stock the vaccine and have it administered by nurses. Thanks to that effort, about 160 patients per month now come in—with a doctor's prescription—for the shot. One recent recipient was clothing-industry executive Jack Gross, 62, who suffered through shingles 19 years ago and wanted to reduce the chance of a recurrence. "It was the most uncomfortable experience I've ever had," he recalls, "and it took me a good six months to get back to normal." Gross, whose rash was on his torso, remembers vividly how the disease robbed him of sleep, sapped his energy, and made it excruciating to wear a shirt and jacket to work. "I would never want to go through that again," he says.

Dr. Cohen educates her colleagues about shingles through lectures, and she has collaborated with the Medical Center's IT Department to alert physicians electronically when their patients become eligible for the vaccine. She's also helping to conduct studies (supported by Merck, the vaccine's manufacturer) on physicians' knowledge, attitudes, and practices regarding the vaccine, and on ways to increase usage among underserved urban dwellers.

"Shingles can really destroy a person's quality of life," she says. "If we can save some people from this terrible illness and make it milder for the rest, that would be beautiful."



As Dr. Elisabeth Cohen (far left) looks on, Jack Gross, who suffered through shingles 19 years ago, receives a vaccine to help prevent a recurrence at Tisch Hospital's Outpatient Pharmacy.

HJD Earns Magnet Recognition for Nursing Excellence *(continued from page 1)*

Even before Magnet, HJD was special. One of only five hospitals in the US dedicated solely to orthopaedics, it performs more than 20,000 orthopaedic and musculoskeletal procedures annually. It is ranked among the nation's top 10 institutions for both orthopaedics and rheumatology by *U.S. News & World Report's* annual survey of the best hospitals in America.

For nurses, working at a specialty hospital poses both opportunities and challenges. "People think being a nurse here is simple because our focus is so specialized, but it's not," notes Vanderberg, who joined HJD 13 years ago. "Our patients often have co-morbidities, such as diabetes and heart failure, and we ask our staff to do a lot. But we also give them considerable support and encouragement in areas like professional development and lifelong learning."

HJD's culture of achievement and expertise was not lost on the Magnet appraisers, who found

the high number of certifications per nurse and the nursing staff's overall level of engagement "exemplary." On average, 27% of nurses at Magnet organizations have specialty certifications, but at HJD the number is nearly 40%, with many nurses holding multiple certifications in, say, orthopaedics, medicine-surgery, rehabilitation, and critical care. What's more, 86% of HJD's nursing staff hold a bachelor of science in nursing (BSN) degree, twice the nationwide average. The emphasis on ongoing education translates into enhanced patient care.

"I like the way we're empowered because it allows us to be advocates for our patients," says Virginia Brosnan, RN, a nurse in the postanesthesia care unit and a 10-year HJD veteran. "If we have issues, we're encouraged to sit down and talk about them. At most other hospitals, we'd have no voice. We feel valuable here, and that makes a difference for us."

Magnet status is the culmination of a rigorous evaluation process. Appraisers—all senior nurses

from Magnet institutions—spent three days shadowing HJD's nurses on every patient floor of the 190-bed hospital, including the night shift. Reams of quality- and performance-based data were assembled and handed over, a project coordinated by Patricia Lavin, RN, director of quality and outcomes.

HJD's nursing administrators acknowledge, however, that the coveted Magnet status is no excuse to rest on their laurels. "Because we're a specialty hospital and 90% of our surgeries are elective, patients come here expecting a lot," says Vanderberg. "Magnet will change the meaning of excellence for us. It will require us to constantly evaluate and improve our performance to keep meeting those expectations."

The Magnet Recognition Program®, developed in 1994, actually has its roots at NYU Langone. The research team that conducted the study that evolved into the program was led by Margaret McClure, EdD, RN, a former chief operating officer and chief nursing executive at NYU Langone and former president of the American Academy of Nursing.



Life Is But a Dream

Q&A with Rodolfo Llinás, MD, PhD, the Thomas and Suzanne Murphy Professor of Neuroscience and University Professor, and Jane Rosenthal, MD, clinical associate professor of psychiatry and director of the Consultation Liaison Psychiatry Service

Why do we dream?

Dr. Llinás: Dreaming is essential for our well-being. If you were to be woken up every time you start to dream, after a while you will begin to hallucinate during your wake state. Indeed, just as one has to clean one's desk to avoid clutter, one has to dream to avoid "mind clutter." Dreaming is a cleansing act.

Dr. Llinás, you've written that dreaming is not all that different from wakefulness. How so?

Dr. Llinás: Dreaming is what the brain is all about—it's a dreaming machine. Wakefulness, or consciousness, is simply a dream state modulated by input from the senses. Consciousness is actually the description our brain makes of the external world. The brain has evolved to make the best possible description of the external world, and to formulate precise movements and know the consequences of each movement. Prediction is the brain's ultimate function.

Dr. Rosenthal, as a psychoanalyst, how do you see dreaming?

Dr. Rosenthal: When psychiatrists talk about dreaming, we talk about what happens in our minds at night when we're sleeping. It's a movie of sorts that's choreographed by the sleeper and has a storyline, which we call the manifest content, which is often a disguise for more complex thoughts and feelings. In psychoanalysis, dreams become a window onto thoughts and feelings that the dreamer is not fully conscious of.

Do you use dreams to help patients address their problems?

Dr. Rosenthal: One of my teachers called dreams "meaning makers." It's really a question of what meaning people make of their dreams. Everyone dreams, although not everyone remembers their dreams. I can teach people how to remember dreams so that they can learn more about what their dreams are saying, and ostensibly learn more about themselves.

Dr. Llinás: I once had a dream that one of my children had died in an accident. I woke up very upset. Then I remembered that there was something wrong with the brakes in my car, and I had to take care of it. I wasn't paying attention to a problem, but it was my unconscious that made me aware of it.

Why do some dreams recur again and again?

Dr. Rosenthal: One theory is that a dream keeps reappearing because it represents an unresolved emotional conflict.

Are some dreams so common that they're almost universal?

Dr. Rosenthal: Many people dream about flying, which often represents mastery, strength, and ability—being able to take control. It's also common to dream about going somewhere and realizing that you're not dressed, which reveals a fear of being exposed—vulnerability.

Can patients control or change their dreams?

Dr. Rosenthal: Some therapists who work with lucid dreaming teach patients to "rewrite" their dreams. This is most often done with patients who have suffered enormous trauma, and their nightmares are reiterations of the trauma. Outside of dreams linked with post-traumatic stress phenomena, I think it's more productive to understand disturbing dreams rather than get rid of them.

Do any examples come to mind?

Dr. Rosenthal: I followed a patient on the neurosurgery service who became very anxious after having spinal surgery. He told me he had a dream about a construction site, with all this scaffolding, that was like the World Trade Center after 9/11. It was very disturbing to him, and he didn't know what to make of it. I suggested that maybe it had to do with the "scaffolding" surgeons applied to his spine. "Of course," he said. "I'm terrified that my scaffolding won't hold, and I'll collapse like the Twin Towers." Comforted by this insight, his anxiety began to improve.

Are dreams a source of creativity?

Dr. Rosenthal: Dreams are a place where unconscious thoughts can be expressed, thoughts that you don't have access to during waking hours. Great inventions are said to have emerged from dreams. The German chemist Friedrich August Kekulé von Stradonitz supposedly discovered the shape of the molecule benzene in a dream. Paul McCartney has said that he awoke from a dream with the song "Yesterday" fully written.

Can everyone access their dreams, or their imagination, in this manner?

Dr. Rosenthal: Only some people can achieve this the way creative artists or scientists can, but I think

practically everybody has the capacity to be highly creative. The question is whether or not you allow yourself to be. People can certainly learn to access their dreams, their creativity. Many artists and writers engage in psychoanalysis when they have trouble accessing their imagination. A psychoanalyst can help you become more aware of all the goings-on in your mind, and to tap the unconscious, which can get trapped in common-day problems and conflicts.

Dr. Llinás: Yes, I agree. The problem with being awake is that the senses don't allow you to think. When you have a big problem, go into a dark room, with a sign outside that says, "Please don't disturb."

Dr. Rosenthal: I do some of my best thinking on the treadmill. No music, no video, nothing. Just thinking.

Dr. Llinás: I'm the same way. I dream in the shower. Many of my research ideas come up in the shower.

Will it ever be possible to access other people's dreams?

Dr. Llinás: We are all condemned to live within the limit of our own cranium, but wouldn't it be wonderful to feel what somebody else feels, to see what other people are dreaming? It won't happen in our lifetime, but it may be possible in the future if the brain can be "wired," perhaps with nanowires, via the vascular system.

Dr. Rosenthal: That sounds scary to me. That's private property. People shouldn't put probes up there.

Dr. Llinás: It is indeed private property. Nevertheless, it is possible to get there, and sadly, given the kind of beings we are, we will at some point. It may be, unfortunately, inevitable.



Do Antibiotics Potentially Cause Childhood Obesity? It Depends on When They're Given, Says Study.

The American farming industry has long relied on antibiotics to fatten up its livestock. Now, researchers at NYU School of Medicine report that these drugs may have a similar effect on children. In a study published in the *International Journal of Obesity* and supported by the NYU Global Public Health Research Challenge Fund, investigators examined data from landmark research in the United Kingdom that had tracked 11,532 children. After analyzing the height, weight, and antibiotic use of these children at the ages of 7 weeks, 10 months, 20 months, and 38 months, they found that babies given antibiotics during the first 6 months of life were 22% more likely to be overweight at 38 months. This risk persisted even when other factors, such as diet, exercise, socioeconomic status of their parents, and other medications given in the first six months of life were taken into account.

The average American child now takes at least one course of antibiotics each year, and an estimated 12.5 million American children and adolescents are obese. How antibiotics promote weight gain remains a mystery, but the NYU study has found that the stage of development at which antibiotics are administered matters. Infants who received antibiotics between 6 and 14 months of life were at no greater risk of being overweight than infants never exposed to antibiotics. One theory to explain



this is that disrupting the bacterial colonization of the gut prior to that period may predispose infants to weight gain later in life. "The earliest exposure is likely to be the greatest concern," adds lead author Leonardo Trasande, MD, associate professor of pediatrics and environmental medicine.

This idea is borne out on the farm, where low doses of antibiotics are commonly used to promote growth in livestock. In fact, the earlier animals receive antibiotics, the more weight they tend to gain. (See "A New Theory about Obesity—Straight from the Gut.") "Microbes in our intestines may play a critical role in how we absorb calories, and exposure to antibiotics, especially early in life, may kill off healthy bacteria that influence how we absorb nutrients, and would otherwise keep us lean," explains Dr. Trasande. "We typically

think of obesity as being grounded in unhealthy diet and exercise, yet increasingly, studies suggest that the epidemic is more complicated than that."

Moreover, studies have found that children exposed to antibiotics are more likely to suffer from asthma, skin disorders, and inflammatory bowel disease. "We're still learning how far the impact of the microbiome reaches and the costs of perturbing it," says co-author Martin Blaser, MD, the Frederick H. King Professor of Medicine, chair of the Department of Medicine, and professor of microbiology.

A New Theory about Obesity—Straight from the Gut

In the late 1940s, animal husbandry took an odd twist. American farmers started noticing that animals given antibiotics grew heavier than animals that did not receive antibiotics. The discovery turned out to be an unexpected boon for the postwar farming industry, which faced growing demand for its livestock. In 1950, a front-page headline in *The New York Times* even declared: "'Wonder Drug' Aureomycin Found to Spur Growth 50%." Actual gains on the farm were more modest, ranging from 1 to 15%. Nonetheless, the practice of administering subtherapeutic doses of antibiotics to animals quickly became the industry standard in the US, and it remains so today.

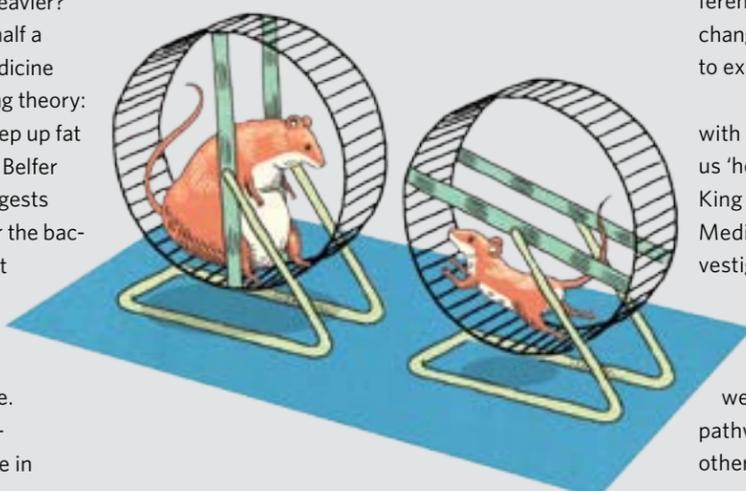
But why would antibiotics make animals heavier? That question has perplexed scientists for over half a century. Now, researchers at NYU School of Medicine have discovered evidence to support an intriguing theory: antibiotics may trigger bacteria in the gut that step up fat production. Their study, funded in part by Diane Belfer and recently published in the journal *Nature*, suggests that exposure to antibiotics early in life may alter the bacterial landscape of the gut in ways that lead to fat gain. "By manipulating the microbial community in the gut and its metabolic characteristics, we can actually alter the host," says co-author Ilseung Cho, MD, assistant professor of medicine.

The finding also provides experimental insight into the relationship between antibiotic use in

children—American children average one course of antibiotics a year—and the crisis of childhood obesity, which now affects 12.2 million kids in the US.

A thicket of microbes, the human gut harbors trillions of bacteria that include at least 1,000 different species. Science has long known that antibiotics can alter this bustling microbial community and make us nauseated. But *fat*?

To shed light on that question, Dr. Cho and his colleagues examined the relationship between antibiotics and mice, whose guts harbor a microbial community similar to that in humans. In their experiment, healthy mice drank water treated with low doses of



Illustrations by Wes Bedrosian

Can Some Grapes or Berries a Day Keep the Oncologist Away?

To Bhagavathi Narayanan, PhD, associate professor of environmental medicine, food isn't

just a source of nourishment and pleasure, it's "daily medicine." Dr.

Narayanan says that in her native India, many foods are

chock-full of phytochemicals, compounds that are produced by plants, such as beta carotene, ascorbic acid (vitamin C), folic acid, and vitamin E. Some phytochemicals have either antioxidant or hormone-like actions. There is some evidence that a diet rich in fruits, vegetables, and whole grains reduces the risk of certain types of cancer and other diseases. Certain phytochemicals are believed to prevent the formation of potential carcinogens, block the action of carcinogens on their target organs or tissue, or act on cells to suppress cancer development.

Two particular phytochemicals—resveratrol, found in red wine, grapes, and berries, and curcumin, the bright yellow compound found in the popular Indian spice turmeric—have strong anti-inflammatory effects, among other cancer-fighting benefits. A diet rich in these substances, says Dr. Narayanan, is "like eating a little bit of aspirin every day—but without the side effects."

"India has very low levels of cancer," notes Dr. Narayanan. "In the town where I grew up, we did not even know the word. In my family, which has a lot of doctors, we never even spoke about cancer." Dr. Narayanan studies prostate cancer, which occurs in 2 to 3% of men in India, whose population is more than 1 billion. This is one of the lowest rates of prostate cancer in the world. By contrast, approximately 16% of American men will be diagnosed with prostate cancer at some point in their lifetime.

But singing the praises of resveratrol and curcumin is one thing. Understanding how they fight cancer and then using them to combat the disease, either as prevention or treatment, is another. Dr. Narayanan is working on both fronts. Her lab and mice studies have demonstrated that curcumin plus resveratrol inhibits the androgen receptor that drives prostate cancer, and activates a transcription factor that switches on the powerful tumor-suppressor gene p53, destroying cancer cells.

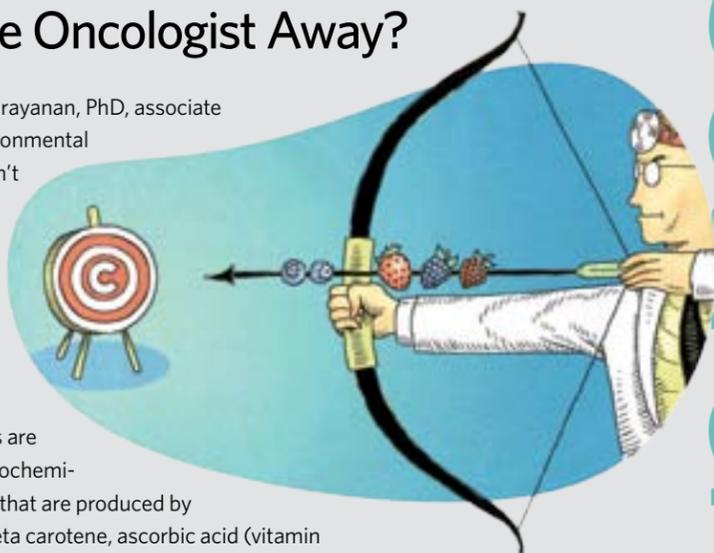
She also has worked on a method to increase the "bioavailability" of these natural compounds to keep them in the blood and body as long as possible to fight cancer. To that end, Dr. Narayanan and her colleagues tested a novel delivery system for curcumin and resveratrol. In a groundbreaking study published in 2009 in the *International Journal of Cancer*, she demonstrated that encapsulating the compounds within a liposome bubble can enhance their chemopreventive effect in mice. The group is now testing the lipid agents against aggressive prostate cancer in mice. They are also collaborating with Japanese researchers to test resveratrol-related compounds against pancreatic cancer.

While research on phytochemicals is promising, Dr. Narayanan is concerned that it will not move forward until a large, long-running clinical trial is conducted. "I believe that accumulating from childhood the protective benefits these foods offer us is the best way to protect against cancer later in life," she says.

antibiotics such as penicillin and vancomycin, commonly administered to farm animals. After seven weeks of antibiotic exposure, the mice had gained roughly the same amount of weight as the untreated mice, but the treated mice had packed on 10 to 15% more fat. Not only did they have more fat tissue, but they were also more likely to be hyperglycemic.

A closer look at the gut microbiome offered an explanation. The team's analysis showed that treated mice harbored increased counts of microbial groups that previously have been linked to obesity in both mice and humans. Looking forward, the team plans to expose mice to larger doses of antibiotics and on different schedules while delving deeper into the molecular changes behind their fat gains. Eventually, Dr. Cho hopes to expand the research to humans.

"Our hypothesis is that nature has endowed us with a very favorable assortment of microbes that call us 'home,'" says Martin Blaser, MD, the Frederick H. King Professor of Medicine, chair of the Department of Medicine, and professor of microbiology, a senior investigator on the study. "Through our modern practices, we are disrupting this ancestral microbiome early in life, just when developmental decisions need to be made in our tissues. We believe that we have been selecting for alternative developmental pathways that are forming the seeds for obesity and other disorders."





Stephen Fischer, DPT, shown here with one of his patients, Florian Jay, is one of some 150 physical therapists at Rusk who have been recruited from the top of their classes at training programs nationwide.

and professional status of the discipline, but also the enormous range of expertise and expanse of knowledge to be mastered when treating so many aspects of rehabilitation.

Parkin says that she's deeply proud of all of Rusk's 150 or so PTs, recruited from the top of their classes at training programs nationwide, but she beams when she speaks of Stephen Fischer, assistant unit supervisor in outpatient physical therapy. "Stephen is one of the most talented young managers I've seen," she says. "He's a great motivator and mentor. He so loves what he does. Most of all, his care for his patients never ends."

Consider Florian Jay, whose spindly right leg Fischer is pushing down on with the weight of his entire body, making him sweat profusely in the air-conditioned gym. "How does that feel?" asks Fischer in a gentle tone that belies his force. "Great," responds Jay. "A little pressure, but no pain." Jay meets with Fischer twice a week in the airy 16th-floor gym at NYU Langone's new Ambulatory Care Center at 240 East 38th Street to help improve his breathing, increase his range of motion, and ease his spasticity.

Jay, who lives with his father, has been confined to a wheelchair for two years. "Florian's deficits are profound," says Fischer. "His left side is essentially paralyzed, and any movement is slow and painstaking." However, as long as his right hand is kept loose and open, he can still sketch quite proficiently. "I'd originally wanted to be a sculptor working with steel and iron," says Jay, whose energy level is significantly diminished by baclofen, a drug administered to loosen his muscles.

Jay's intensive workouts will enable him to have a pump implanted in his abdomen to deliver the baclofen in microtargeted doses into the spinal fluid. The process, called intrathecal baclofen therapy, will not only allow more normal muscle movement, but should also eliminate his drowsiness. Jay is psyched. "My brain works fine," he says, "and I want to be able to use it fully. This procedure could give me my life back. I'd like to return to school. Who knows? Maybe I'll become a PT, like my buddy here."

The Enablers

As Empowering Partners in Care, Rusk's Physical Therapists Help Patients Help Themselves

They seem like two friends working out together in a crowded Midtown gym. Their laughter is natural, easy, and the banter is softly sarcastic. They both favor unorthodox workout outfits. "Ready?" asks Stephen Fischer, DPT, 34, a compact, well-toned fellow in a form-fitting polo shirt, khakis, and rubber-soled shoes. "Always," says Florian Jay, 29, a tall, slender guy in cargo shorts and a baggy, short-sleeved shirt. Jay has transverse myelitis, a neurological disorder caused by an inflammation of the spinal cord, which has left him largely paralyzed.

"On my count," says Fischer, flexing his knees for stabilization as he positions himself to rock back and forth enough times to enable him to lift Jay's dead weight. On "three," he hoists the inert, six-foot-tall, 150-pound Jay from his motorized wheelchair, cradling him firmly before gently placing him on an elevated mat. Thus begins a strenuous one-hour workout that will test the physical and emotional limits of both men.

"Our physical therapists [PTs] are trained to treat the whole person," explains Kate Parkin, PT, DPT, clinical assistant professor of rehabilitation medicine and senior director of rehabilitation therapy services

at NYU Langone Medical Center's Rusk Institute of Rehabilitation Medicine. "Dr. Howard Rusk founded this institute on the philosophy that rehabilitation medicine should provide all patients with care for their psychological and social needs, not just their illness or disability."

October is National Physical Therapy Month, an occasion for Parkin to reflect on the history and growth of her profession: "Many of the methods and interventions used by physical therapists today—massage, exercise, heat and cold therapy, underwater maneuvers—probably date back to Hippocrates." But as a profession, physical therapy was born in 1917, when a special unit of the US Army Medical Department—the Division of Special Hospitals and Physical Reconstruction—developed "reconstruction aide" programs to rehabilitate wounded veterans of World War I.

Each day in America, more than 120,000 licensed PTs carry on a tradition of helping people to help themselves by treating some 1 million patients in both inpatient and outpatient settings. As of 2016, all entry-level training programs for PTs nationwide will require a doctor of physical therapy (DPT) degree, reflecting not only the maturity

Peace of Mind—While You Wait

At NYU Langone's New Center for Women's Imaging, the Accent Is on Convenience

When Elizabeth Talerman's primary care physician told her that she'd be going to a different center for her annual screening mammogram this year, she didn't expect much. "I figured it would be the same as it had always been," says the 48-year-old brand strategist, who has been dutifully getting mammograms every year since she turned 40, although she confesses to sometimes letting things slide a little longer than that. "You go in, and you wait and you wait. And then you get the mammogram and you leave, and you wait and you wait again for someone to call you or send you a letter. I had no idea I'd be walking into something totally different."

What Talerman walked into on July 19 was NYU Langone Medical Center's new Center for Women's Imaging, a dedicated street-level screening facility at 221 Lexington Avenue at 33rd Street. For screening mammograms, results can be provided while you wait during weekdays. Same-day appointments are available, as are evening and weekend hours. Unlike a diagnostic mammogram, a screening mammogram is for women who do not have current signs or symptoms of breast cancer. In addition to its low-dose digital technology for mammograms, the center also offers screening breast ultrasound and bone-density scans.

Shortly after Talerman entered the waiting room, she was ushered to a changing area, then escorted to a mammography room. After the imaging, the patient waited to receive the results. In this case, a radiologist spotted something of interest on the images that she wanted to discuss with the patient. Putting Talerman's images up on the digital viewing monitor, the physician pointed to a white line. "This is fibroglandular tissue," she explained. "It doesn't show up in everyone, but it's not a

problem, and I don't want you to worry. Your mammogram shows absolutely no abnormalities."

Talerman was relieved and delighted. "I had assumed I was healthy, but I've buried one friend due to breast cancer and have another who's just had a mastectomy," she explains. "It was wonderful not to have that hanging over my head. I walked out thinking, 'This is the way healthcare should be.'"

October is Breast Cancer Awareness Month. Given the seemingly never-ending barrage of confusing answers to important questions—Who should have a mammogram? At what age should you start having them? How often should you have one?—the decision to get a mammogram has become more stressful than ever. In 2009, the US Preventive Services Task Force set off a firestorm when it declared routine screening mammography to be unnecessary in women under 50. In June 2012, the American Medical Association took a stand in direct conflict with that recommendation, supporting routine screening mammograms starting at age 40.

"Women have gotten mixed messages about the importance of breast cancer screening, and that's a real negative," says Freya Schnabel, MD, professor of surgery and director of breast surgery. "While there's some controversy about how to best serve women with mammography, there's still no question that it's the only test we currently have that's been demonstrated to reduce mortality from breast cancer. A woman who wants to maximize her opportunity for early detection of breast cancer should have annual mammograms from age 40 on."

Making the entire patient experience—from scheduling the mammogram, to going through the procedure, to finding out the results—easier, faster, and less stressful could mean that women stop

putting it off as an unpleasant chore. In this case, discouraging procrastination could save lives. "The new center provides seamless care," notes Dr. Schnabel. "You get through the system promptly, and you get the answers you need as soon as possible."

Says Hildegard Toth, MD, associate professor of radiology and chief of breast imaging: "It's like scheduling peace of mind."

For more information or to make an appointment, call 212-731-5002.

Web Extra: for an article about a woman who opted for a radical form of treatment because she was at high risk for a recurrence of breast cancer, see "A Double-Barreled Diagnosis" at www.newsandviews-digital.com.



During weekdays, the new Center for Women's Imaging can provide results for screening mammograms while the patient waits.

NEWS & VIEWS

Inside This Issue



Believing in Your Own Brain More than 1.7 million Americans suffer traumatic brain injuries (TBIs) each year, and that number is rising because our aging population is more prone to falls—the leading cause of TBI. One patient, Stephanie Quito, is rebuilding her life with help of therapists at NYU Langone's Rusk Institute. [page 1](#)



A Prescription for Enhancing Patient Care As director of the Division of Pharmacotherapy, John Papadopoulos, clinical assistant professor of medicine, heads up a 15-member team of clinical pharmacists that's changing the notion—and expanding the role—of the pharmacist beyond that of the behind-the-counter dispenser of drugs. [page 3](#)



Life Is But a Dream Why do we dream? Why do some dreams recur again and again? Are some dreams so common that they're almost universal? Are dreams a source of creativity? Dr. Rodolfo Llinás, a neuroscientist, and Dr. Jane Rosenthal, a psychiatrist, tackle these and other questions about the most mysterious of our mental activities. [page 5](#)



The Enablers Each day in America, more than 120,000 licensed PTs carry on a tradition of helping people to help themselves by treating some 1 million patients in both inpatient and outpatient settings. In honor of National Physical Therapy Month, one of Rusk's finest describes the unique bond between him and his patient. [page 7](#)

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Row, Row, Row Your Boat

For people with major physical disabilities, some of life's simple pleasures may seem painfully out of reach. Take, for example, the timeless summer ritual of rowing on a breezy lake. Impossible? Not for participants in the Young Women's Program rowing camp, held each July by the Initiative for Women with Disabilities (IWD) at the Elly and Steve Hammerman Health and Wellness Center at NYU Langone Medical Center's Hospital for Joint Diseases.

Sixteen campers, ages 15 to 26, traveled to Meadow Lake in Queens for this year's five-day event. Volunteers helped to ensure that the program—sponsored by Row New York, a nonprofit that empowers young women through competitive rowing—was a buoyant success.

Each morning, the campers, whose conditions range from spina bifida to cerebral palsy, practiced their technique on land, using specially fitted ergometers. Members of Row New York's high school rowing team provided coaching and encouragement. Then, it was time to hit the water in a pair of barges adapted for cruising, racing, and aerobically enhanced fun.

Besides providing exercise and camaraderie, the camp's most important benefit may be to strengthen its participants' sense of personal potential. "Rowing is a sport in which people with disabilities can be equal with their able-bodied peers," says Judith Goldberg, IWD's director. "All their lives, these girls have been told, 'You can't do this. You can't do that.' We're showing them they can do anything." Goldberg should know. Born with brittle-bone disease, she became a competitive swimmer as a young woman and rowed as part of her training.

"When we started on Monday," she adds, "they all looked a little sleepy and pale. By Friday, they had a glow and they were all buffed up. They looked radiant!"